

Appln No. 10/783,227  
Amdt date October 27, 2005  
Reply to Office action of July 27, 2005

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-19. (Canceled)

20. (Currently Amended) An optical receiving apparatus, comprising:

a photodetector for converting an optical signal input from an optical transmission line to an electrical signal;

a clock extractor for extracting a clock from the electrical signal;

a threshold controller programmed with information about clock amplitude versus threshold characteristics ~~for determining a signal receiving discrimination threshold by collating and~~ for collating an amplitude of the extracted clock ~~from the clock extractor~~ with the clock amplitude versus threshold characteristics; ~~and for determining and providing to the discriminator a discrimination threshold;~~ and

a discriminator for discriminating the electrical signal by applying to the electrical signal the ~~according to the signal receiving determined~~ discrimination threshold ~~determined by the threshold controller.~~

21. (Canceled)

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22. (Previously Presented) The optical receiving apparatus of claim 20, further comprising a signal brancher for branching the electrical signal from the photodetector to a first electrical signal component and a second electrical signal component.

23. (Original) The optical receiving apparatus of claim 22, wherein the signal brancher simultaneously applies the electrical signal from the photodetector to the discriminator and the clock extractor.

24. (Original) The optical receiving apparatus of claim 22, wherein the signal brancher selectively applies the electrical signal from the photodetector to the discriminator and the clock extractor.

25. (Currently Amended) A method for optical reception, comprising:

converting an optical signal input from an optical transmission line to an electrical signal;

extracting a clock from the electrical signal;

storing information about clock amplitude versus threshold characteristics;

determining a discrimination threshold by collating an amplitude of the extracted clock with the stored information about clock amplitude versus threshold characteristics;

providing the determined discrimination threshold to a discriminator; ~~determining a signal receiving discrimination~~

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~~threshold according to an amplitude of the clock by collating an amplitude of the extracted clock with clock amplitude versus threshold characteristics; and~~

~~discriminating the electrical signal according to the determined signal receiving discrimination threshold by applying the determined discrimination threshold to the electrical signal.~~

26. (Canceled)

27. (New) The optical receiving apparatus of claim 20, wherein the threshold controller determines the discrimination threshold by moving the discrimination threshold to a space side when the clock amplitude decreases and moving the discrimination threshold to a mark side when the clock amplitude increases.

28. (New) An optical receiving apparatus, comprising:  
a signal brancher for branching an optical input signal received from an optical transmission line to a first signal component and a second signal component;  
a clock extractor for extracting a clock having an amplitude;  
a discriminator for discriminating the first signal component; and  
a threshold controller for generating a discrimination threshold for the discriminator according to a relationship between the extracted clock amplitude and a bit error rate to which the extracted clock amplitude corresponds.

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29. (New) The optical receiving apparatus of claim 28, further comprising a photodetector coupled before the signal brancher for converting the optical input signal to an electrical input signal, wherein the signal brancher branches the electrical input signal from the photodetector to the first signal component and the second signal component.

30. (New) The optical receiving apparatus of claim 29, further comprising a first linear amplifier electrically coupled between the photodetector and the signal brancher for amplifying the electrical input signal.

31. (New) The optical receiving apparatus of claim 29, further comprising a second linear amplifier electrically coupled between the clock extractor and the threshold controller for amplifying the extracted clock.

32. (New) The optical receiving apparatus of claim 28, further comprising a first photodetector for converting the first signal component to a first electrical signal to be input to the discriminator, and a second photodetector for converting the second signal component to a second electrical signal to be input to the clock extractor.

33. (New) The optical receiving apparatus of claim 32, further comprising a first linear amplifier electrically coupled between the first photodetector and the discriminator for

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amplifying the first electrical signal from the first photodetector.

34. (New) The optical receiving apparatus of claim 32, further comprising a second linear amplifier electrically coupled between the clock extractor and the threshold controller for amplifying the extracted clock.